

We claim:

1. A thin film transistor liquid crystal display having fast response and wide viewing
5 angle, comprising:
 - a first substrate with a first common electrode layer;
 - a second substrate with both a pixel electrode layer and a second common
electrode layer;
 - liquid crystal between the first substrate and the second substrate; and
 - 10 means for generating an electric field between the first common electrode layer in
the first substrate and both the pixel electrode layer and the second common electrode
layer in the second substrate so that the display provides fast responses to high input data
rates and allows for wide viewing angles for viewers.
- 15 2. The display of claim 1, wherein the electric field generating means has:
 - the second common electrode layer separated from the pixel electrode layer by an
insulation layer in the second substrate.
3. The display of claim 1, further comprising:
20 means for supplying a voltage source to the first common electrode layer.
4. The display of claim 1, further comprising:
 - means for supplying a voltage source to the second common electrode layer.
- 25 5. The display of claim 1, further comprising:
 - means for supplying a voltage source to the pixel electrode layer.

6. The display of claims 3, 4 and 5, wherein the means for supplying a voltage source
to one of the first common electrode layer and the second common electrode layer results
5 in an unequal voltage.
7. The display of claim 6, wherein the unequal voltage is higher in the first common
electrode layer than the second common electrode layer.
- 10 8. The display of claim 6, wherein the unequal voltage is higher in the second
common electrode layer than in the first common electrode layer.
9. The display of claim 1, wherein the electric field generating means includes:
a resistive film in between portions of the pixel electrode layer and the second
15 common electrode layer.
10. The display of claim 2, further comprising:
a dielectric layer adjacent to the first common electrode layer.
- 20 11. The display of claim 1, wherein the electric field generated is non-vertical.
12. The display of claim 1, wherein the electric field generated is vertical.

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13. A method of providing fast response and wide viewing angle to thin film transistor liquid crystal displays, comprising the steps of:

providing a liquid crystal layer between a first substrate and a second substrate;
and

5 generating an electric field between the substrates, wherein voltage is applied to a first substrate with a first common electrode layer, a second substrate with a second common electrode layer and a pixel electrode layer, so that there are fast responses to input data and wide viewing angles occur for viewers.

10 14. The method of claim 13, wherein the step of generating an electric field includes the step of:

applying voltage to the pixel electrode layer that is approximately equal to the voltage of the second common electrode in the second substrate, so that a uniform, vertical electric field occurs.

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15. The method of claim 13, wherein the step of generating an electric field includes the step of:

applying voltage to the pixel electrode layer, that is unequal to the voltage in the second common electrode in the second substrate so that a non-vertical electric field

20 occurs.

16. The method of claim 15, wherein the step of generating a non-vertical electric field includes the step of:

forming a resistive layer between the pixel electrode and the second common
25 electrode; and

applying voltage to the pixel electrode that is unequal to the voltage of the second common electrode so that a lateral electric field occurs.

17. The method of claim 15, wherein the step of generating a non-vertical electric field includes the step of:

forming a dielectric layer across one of the substrates; and

5 applying to the pixel electrode so that a strong electric field with improved light efficiency occurs.

18. The method of claim 13, wherein the applied voltage to each of the electrode layers includes the step of applying an unequal voltage between the first and the second

10 common electrodes, wherein pixel electrode voltage depends on the input data and the voltage of the first and second common electrodes does not depend on the input data.

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